MitoAge: a database for comparative analysis of mitochondrial DNA, with a special focus on animal longevity

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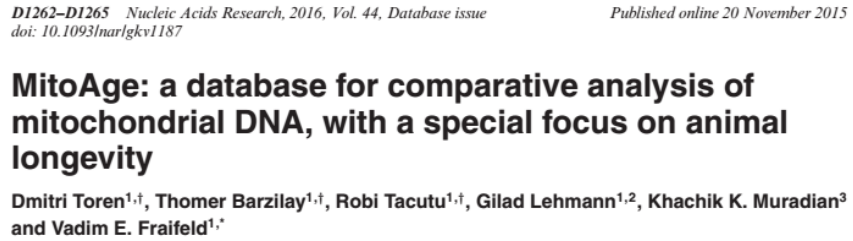
http://www.mitoage.info/


D1262–D1265 Nucleic Acids Research, 2016, Vol. 44, Database issue Published online 20 November 2015
doi: 10.1093/nar/gkv1187

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What is MitoAge?

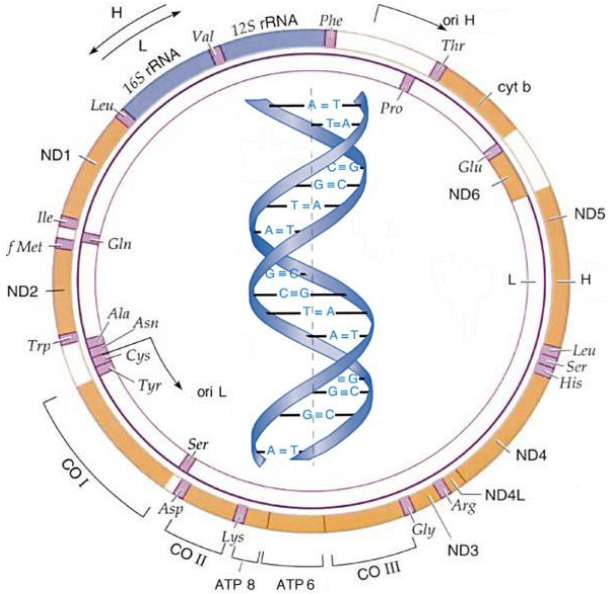
MitoAge is a curated, publicly available database, containing an extensive collection of calculated mtDNA data, integrated with longevity records. The MitoAge website also provides the basic tools for comparative analysis of mtDNA, with a special focus on animal longevity.

Why is it important?

Mitochondria are the most “hard-working” organelles and the only organelles in the animal cell that have their own genome. They have long been considered one of the major players in the mechanisms of aging, longevity and age-related diseases. We and others have shown strong correlative links between mammalian maximum lifespan and mtDNA base composition.

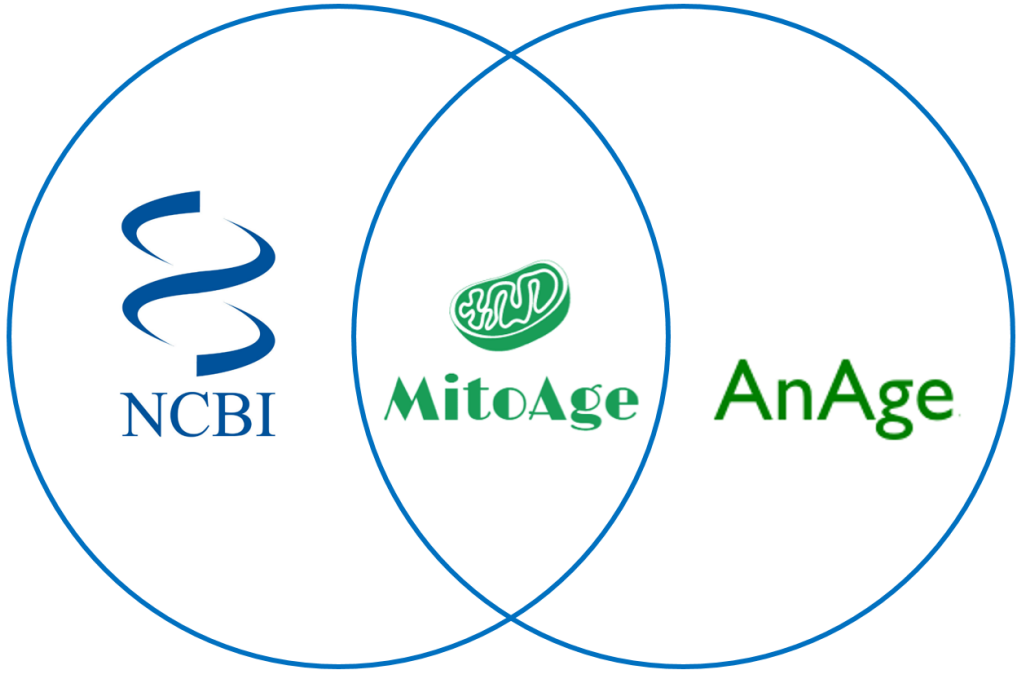
What data is available?

MitoAge contains calculated mtDNA compositional features of the entire mitochondrial genome, mtDNA coding (tRNA, rRNA, protein-coding genes) and non-coding (D-loop, insertions) regions, codon usage for each protein-coding gene, amino acids frequency, and longevity records for over 900 species from the Kingdom Animalia.



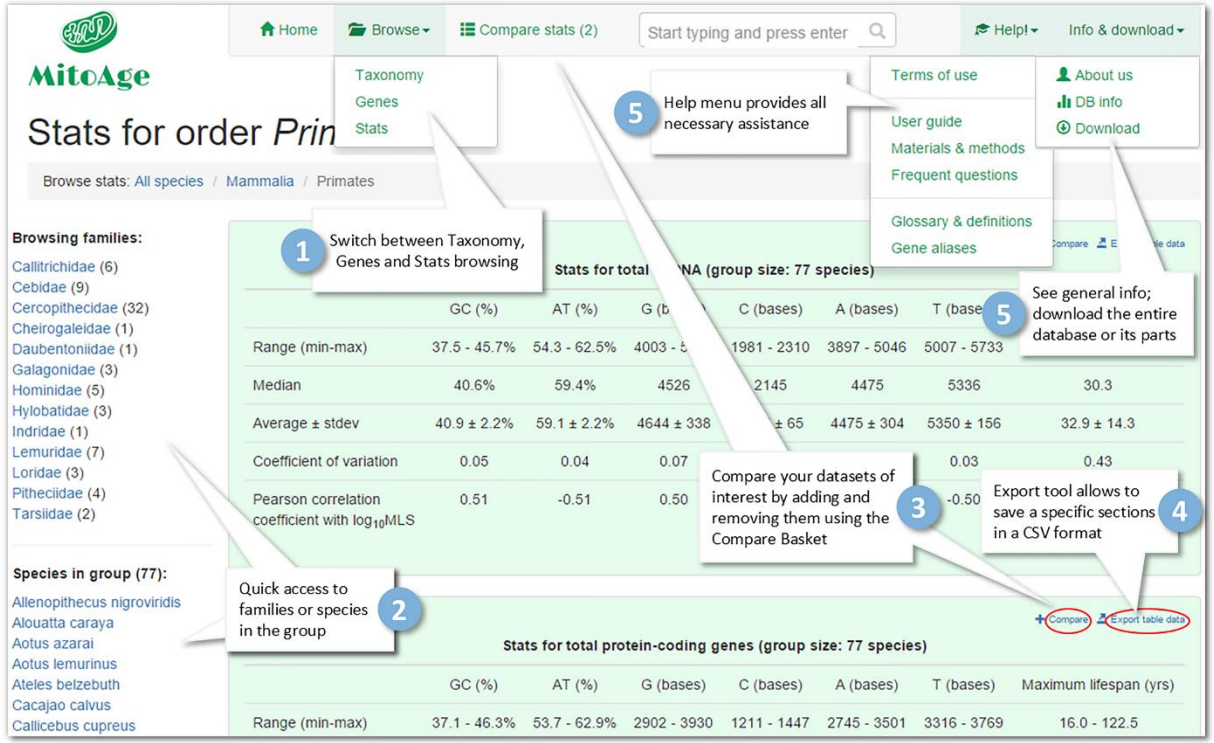
“The reasons for some animals being long-lived and others short-lived, and, in a word, causes of the length and brevity of life call for investigation."

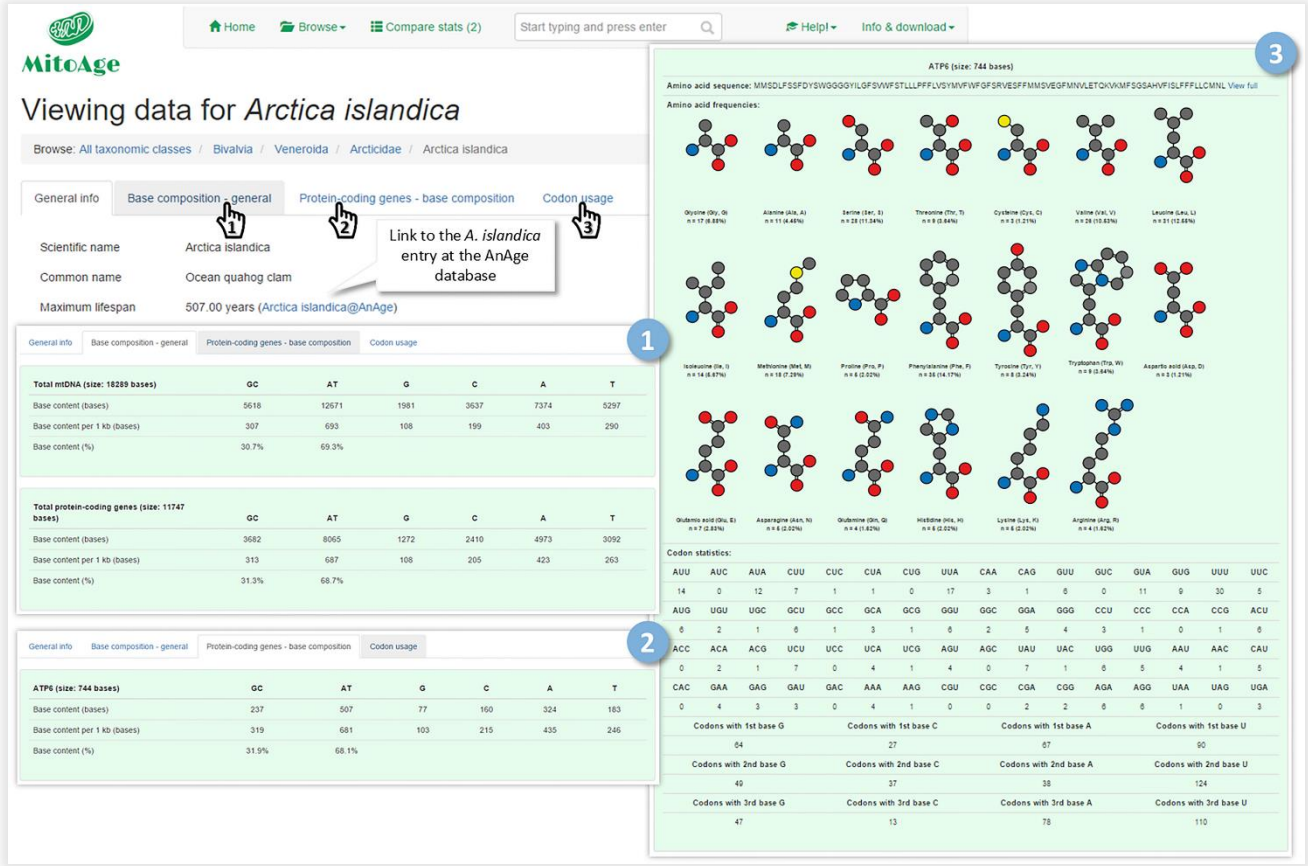
Aristotle (350 B.C.): *On Longevity and Shortness of Life*



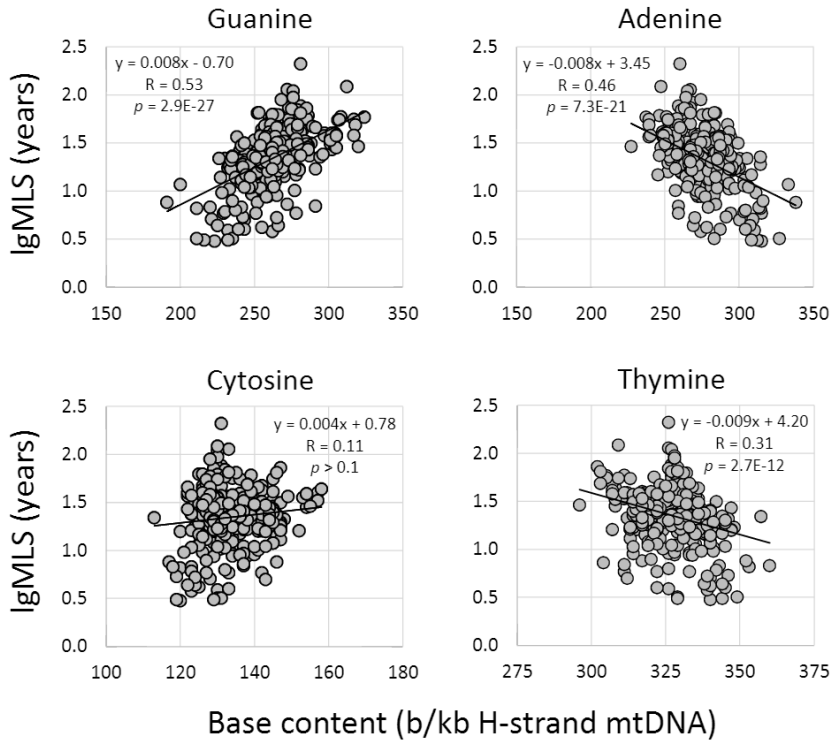
Taxa (scientific name)	Species
Mammals (Mammalia)	390
Birds (Aves)	152
Reptiles (Reptilia)	94
Amphibians (Amphibia)	29
Fishes (Actinopterygii, Sarcopterygii, Cephalaspidomorphi, Chondrichthyes)	251
Non-chordates (Bivalvia, Echinoidea, Chromadorea, Insecta, Malacostraca)	6
Total	922

- Fast, simple and intuitive design
- Easily updated
- Manually and automatically curated
- Export tool
- On-the-fly calculations
- Statistics
- Comparison tools





Mammals: Correlations of MLS with mtDNA base content (n = 390)



Acknowledgements: Many thanks to all our lab members for their continuous assistance

Fund in Memory of
Dr. Amir Abramovich